SIDEWINDER 15 TM

MICLIC FIRING PROCEDURES

is packet is intended to give a comprehensive view of all actions taken in the firing of the MICLIC. A estions not covered in this packet can be researched in the following references:

TM 9-1375-215-14&P	Demolition Kit, Mine Clearing Line Charge (Op-Gen Spt Maint)
LO 9-1375-215-10	Demolition Kit, Mine Clearing Line Charge (lube order)
TB 43-0001-36-5	
FM 20-32	Mine/Countermine Operations
MICLIC Student Text	U.S. Army Engineer School Handout

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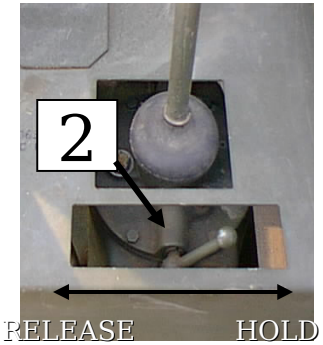
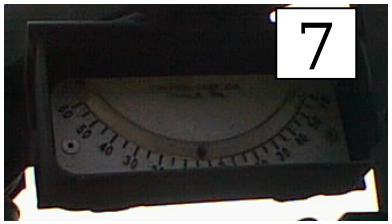
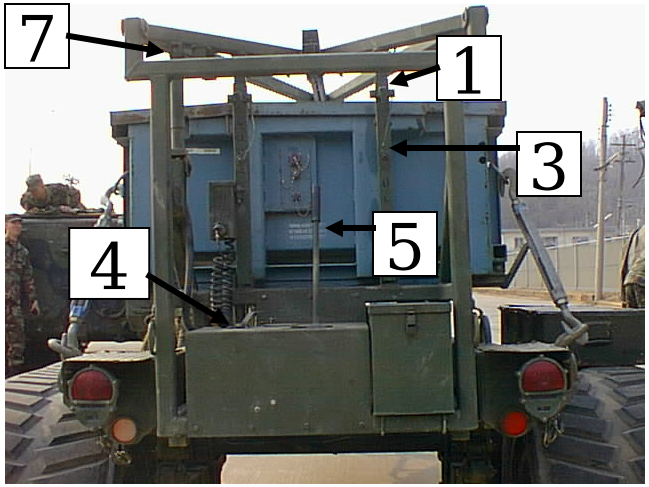
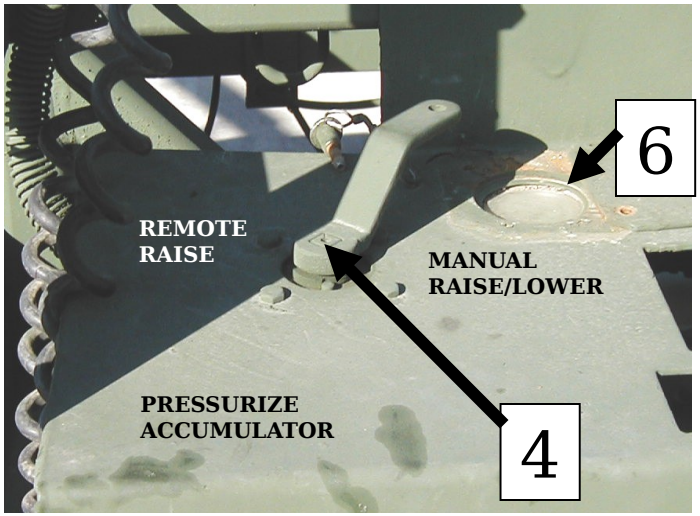
Checking the pressure 2





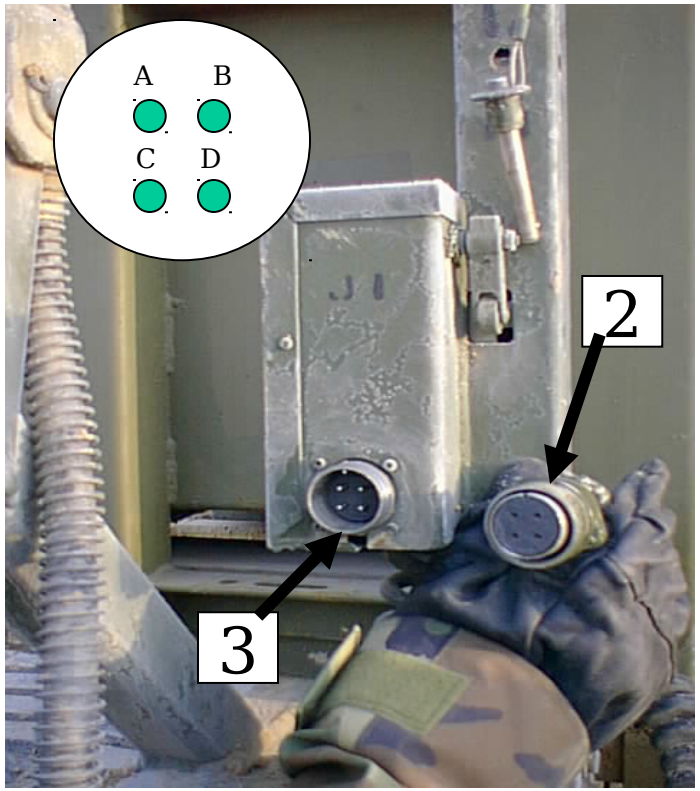


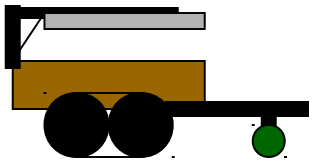


a) Engage detents [1] by pulling down on levers
b) Ensure release valve handle [2] is in HOLD position
c) Insert ball-lock pins[3] into RAISE (side) position on launcher rail supports
d) Move hydraulic control valve handle [4] to PRESSURE ACCUMULATOR position
e) Pump handle [5] until resistance to motion is felt and check pressure (aprx 2250+psi)
f) Move hydraulic control valve handle [4] to MANUAL RAISE/LOWER position
g) Pump handle [5] until detents[1] engage with clinometer [6] @ about a 40º angle
h) Continue raising until rail reaches a positive stop
i) Release detents [1] by pushing up on levers
j) Move release valve handle [2] slightly toward RELEASE position and slowly lower launcher rail to 0°
k) Move release valve handle [2] to hold position
l) Move hydraulic control valve handle [4] to PRESSURE ACCUMULATOR position
m) Engage detents [1] by pulling down on levers
n) Pump handle [5] until 3200 psi (green area) is indicated on pressure gage[6]
o) Move hydraulic control valve handle[4] to REMOTE RAISE position
p) Ensure detents[1] engage, clinometer [7] reads about 47°, and white position marks on rail supports are visible from front and rear of launcher
q) Return hydraulic control valve handle [4] to MANUAL RAISE/LOWER position
r) Release detents [1] by pushing up on levers
s) Move release valve handle [2] slightly toward RELEASE position and slowly lower launcher rail to 0°
t) Move release valve handle to HOLD position, and pull out all lock pins [3] from the launcher rail support RAISE position to the LOCK (rear) position

J-Box Continuity

The continuity test verifies that the J-Box safety switch works and there are breaks in the wires needed to fire the MICLIC. The test is done using a mult [1] set on OHMs across the Plug Connector Pins [2] and the Receptacle Con Pins [3].



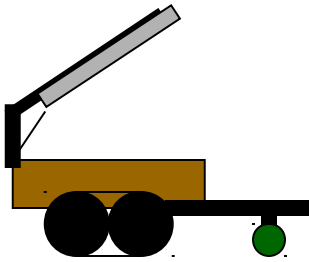


[2] PLUG CONNECTOR, P1, PIN

[3] RECEPTACLE CONNECTOR, P1, PINS — Continuity?	A	B	C	D
A	YES [1]			
B	NO	NO	NO	NO
C	NO	NO	YES	NO
D	NO	NO	NO	NO

Rail in the Down Position

1. Internal Wire Shunt

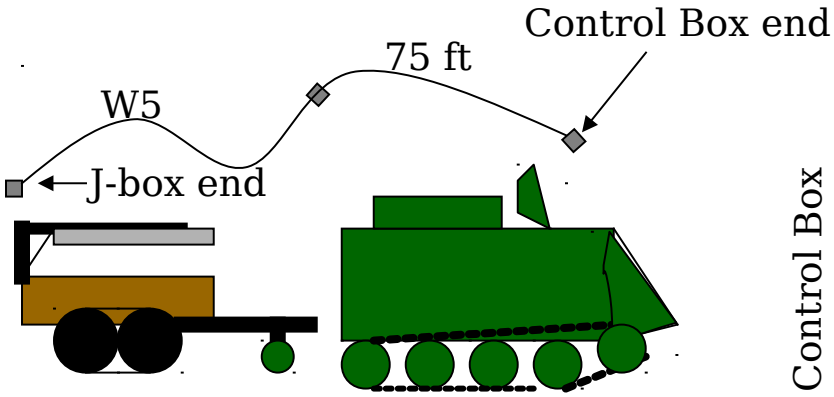


[2] PLUG CONNECTOR, P1, PIN

[3] RECEPTACLE CONNECTOR, P1, PINS — Continuity?	A	B	C	D
A	YES	NO	NO	NO
B	NO	YES	NO	NO
C	NO	NO	YES	NO
D	NO	NO	NO	NO

Rail in the Up Position

75 FT & W5 Cable Continuity

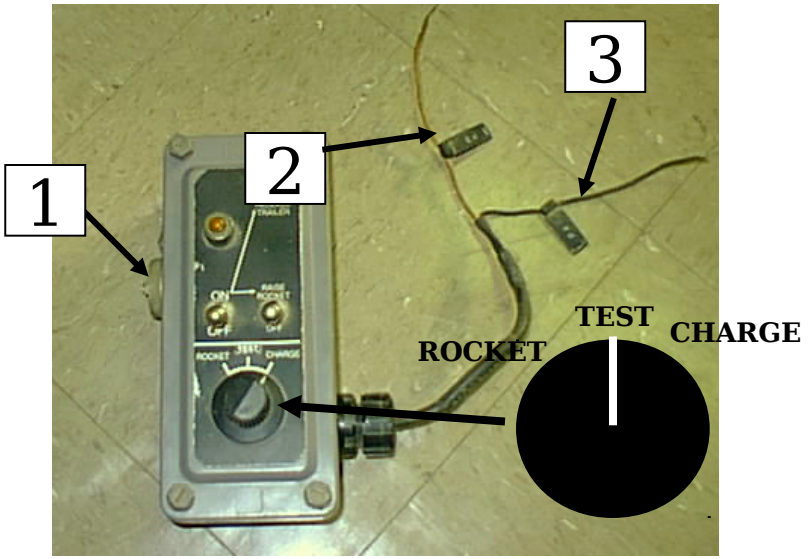


Safety Switch (J-box) Assembly Connector Pins

Control Box Connector Pins

Continuity?	A	B	C	D
A	YES	NO	NO	NO
B	NO	YES	NO	NO
C	NO	NO	YES	NO

Control Switch Box Continuity



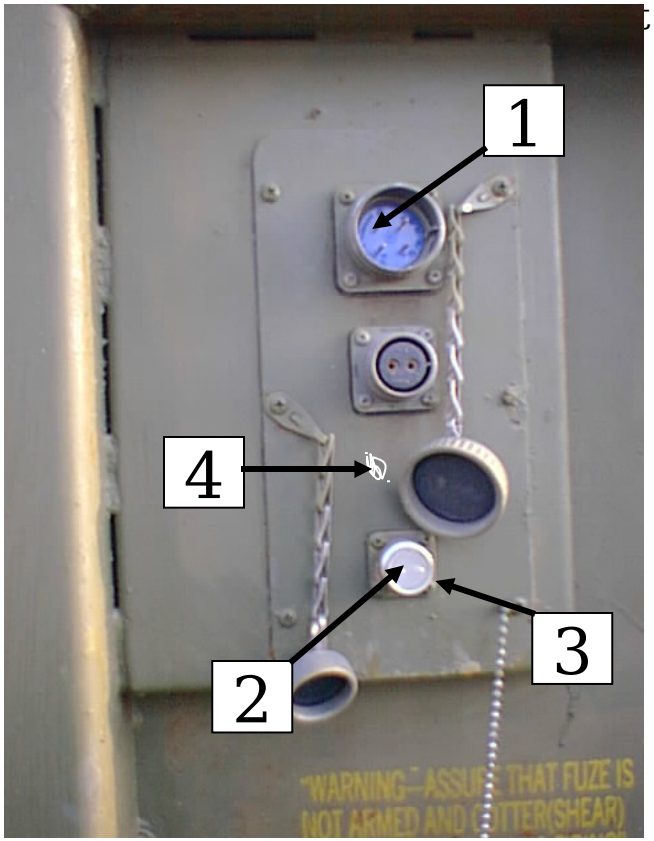
Control Switch Leads

Cable Connector Pins [2]

Continuity during these settings?	P3 (1)	P4 (2)
A	NONE	ROCKET
B	OFF, POWER	POWER
C	NONE	CHARGE

Charge Box Continuity

This test is done to verify that there is no damage to the charge b
such as crushed or disconnected wires. It is done with the multim
t on OHMs across the following points.



Test 1:
Pin "A" [1] of receptacle #1 to the right pin [2] of receptacle #
=Multimeter should register Continuity

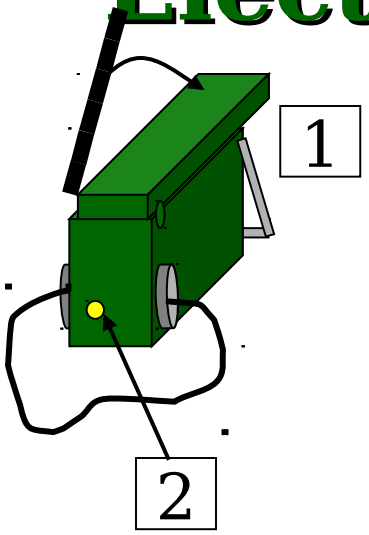
Test 2:
The right pin[2] of receptacle #3 to the shell[3] of receptacle
=Multimeter should NOT register continuity

Test 3:
The right pin[2] of receptacle #3 to panel between receptacle
#3 and receptacle #2 (paint should be scratched away to gain
metal to metal contact [4])
=Multimeter should NOT register continuity

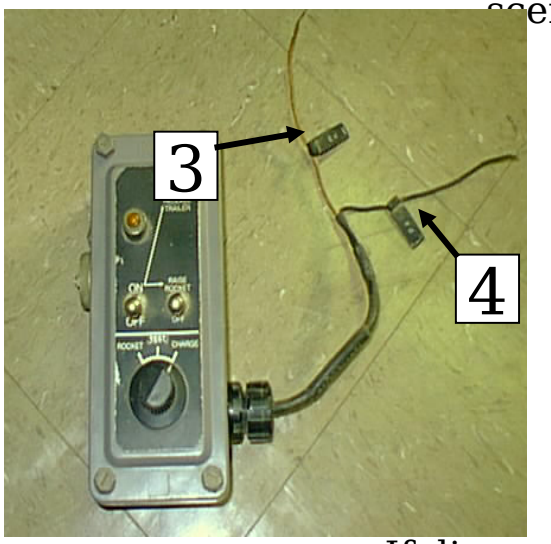
If any of these tests do not meet the continuity standard, the junc
Box has been damaged and should be returned to the ASP

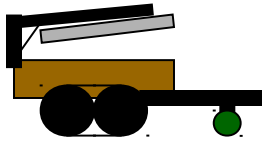
Electrical System Continuity

(MOD 2 and MOD 3)



+Test **M15 Circuit Tester** [1] by connecting one post to the other with a sec
of wire and activating tester (the lamp will light on indicator[2])
+Test **Blasting Machine** (CD450/ M34) by using the Multimeter. Set on vol
position probes on the terminals, and activate the machine. The meter shoul
no less than **222 volts**.
+Test the complete **Electrical System**.
-This check is done with the entire system connected with the shunt (found
the fuse container) connected in receptacle No 3.
-Connect Blasting machine to the P3 [3] and P4 [4] connectors on the Cont
-Verify that the light [2] can be seen on the M51 Circuit Tester in the follow
scenarios.

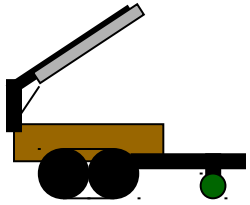




Rail at 5°

Selector Box Position

Light?	TEST	ROCKET	CHARGE
M51	YES	NO	NO



Rail at 47°

Selector Box Position

Light?	ROCKET	CHARGE
M51	YES	YES

If discrepancies exist, recheck connections and repeat. If they still exist, disco
and request assistance from unit maintenance.

Inspect M58A4/A5 Charge

Inspect the lot number for any Safety Messages (17th ORD 732-6507)

Check For	Accept	Reject	Action
Loss of paint	Small area	Large area	A: touchup/continue R: ASP
Markings smeared or illegible	Lot #legible	Lot #illegible	A: continue R: ASP
Rust or corrosion	Slight	Moderate/Heavy	A: clean and touchup/continue R: ASP
Penetration damage	None	All	A: N/A R: ASP
Damage to charge or nylon rope	Very slight	Any that effects detonating cord or rope core	A: continue R: ASP
Moisture on line charge, nylon sleeve	Damp	Wet	A: continue R: ASP
Obvious defaults in wires and connections	None	Damaged wires and connections	A: N/A R: ASP

Inspect M1134A1E1/A2 Electric Fuse

Check For	Accept	Reject	Action
Markings smeared or illegible	Lot #legible	Lot #illegible	A: continue R: ASP
Moisture (outer pack)	Damp	Wet	A: continue R: ASP
Armed fuze (check arming window [1])	Window shows green "S"	Window shows red "A"	A: continue R: notify EOD place away from other explosives
Fuze does not fit when meshing slots in connector blocks	None	All	A: continue R: ASP

ASP= Contact ASP for Action

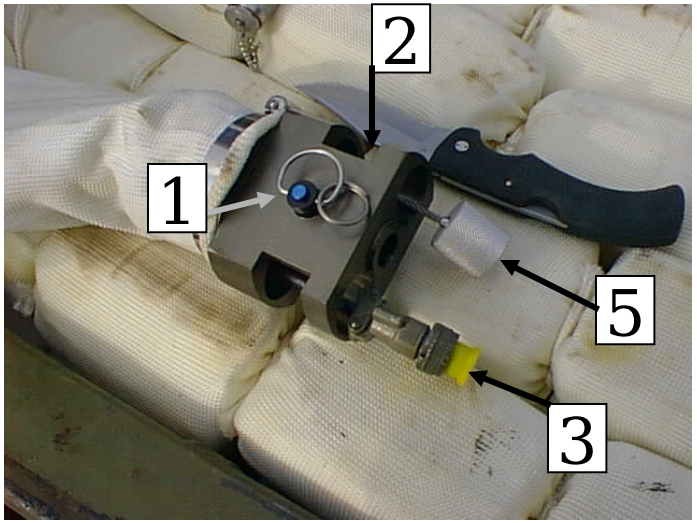
Inspect Rocket

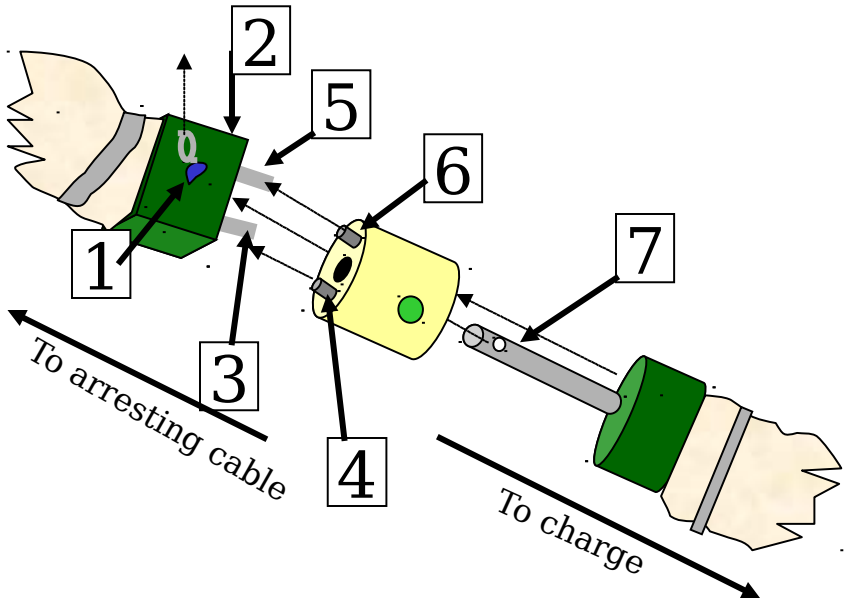
Check the lot number for any Safety Messages (17th ORD 732-6507

Check For	Accept	Reject	Action
Rocket plate installed with four screws[1]	All present	Screws missing	A: continue R: ASP
Dents or Scratches	Scratch	Dent more than 1/8 " deep	A: continue R: ASP
Missing ball lock pin[2]*	None	Any	A: N/A R: ASP
Loss of paint	Small area	Large area	A: touchup/continue R: ASP
Markings smeared or illegible	Lot #legible	Lot #illegible	A: continue R: ASP
Rust or corrosion	Slight	Moderate/Heavy	A: clean and touchup/continue R: ASP
Penetration damage to outer packet	None	Any	A: N/A R: ASP
Penetration damage to rocket	None	Any	A: continue R: ASP
Moisture (outer packet)	Damp	Wet	A/R: unpack and inspect inner pack
Moisture (rocket motor)	Damp	Wet	A: N/A R: ASP

*Ensure rocket ball lock pin[2] is not installed until prepared to fire

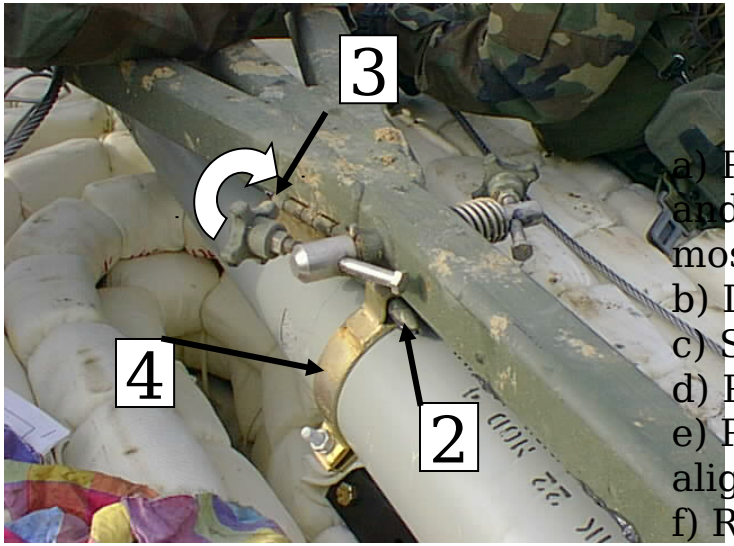
Install fuse

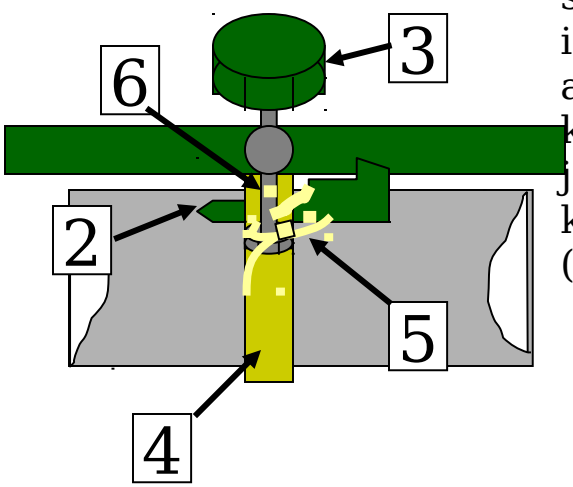




a) Remove Ball lock pin [1] from arresting cable fuse connector [2]
b) Screw on and tighten electrical connector [3] to the fuse electrical
receptacle [4]
c) Screw on and tighten arming wire connector [5] to arming pin assembly [6]
d) Slide fuse into arresting cable [2] and slide linear fuse connector shaft [7]
into center hole of fuse, ensuring wires are not twisted.
e) Insert ball lock pin [1] into arresting cable fuse connector [2] until it seats
in linear charge fuse connector shaft [7] hole
f) Test connection by pulling connectors in opposite directions
g) Pull back nylon sleeve[8] on arresting cable fuse connector [2] and inspect
that there is tape (electrical, masking, or 100 mph) [9] connecting the electrical wires and arming wires on one side. Ensure that the arresting cable is on the opposite side of the nylon rope. Replace and secure the nylon sleeve.
h) [illegible] the back rig[illegible]
co[illegible]o seat the fus[illegible]
i) R[illegible]

Install Rocket (1 of 3)



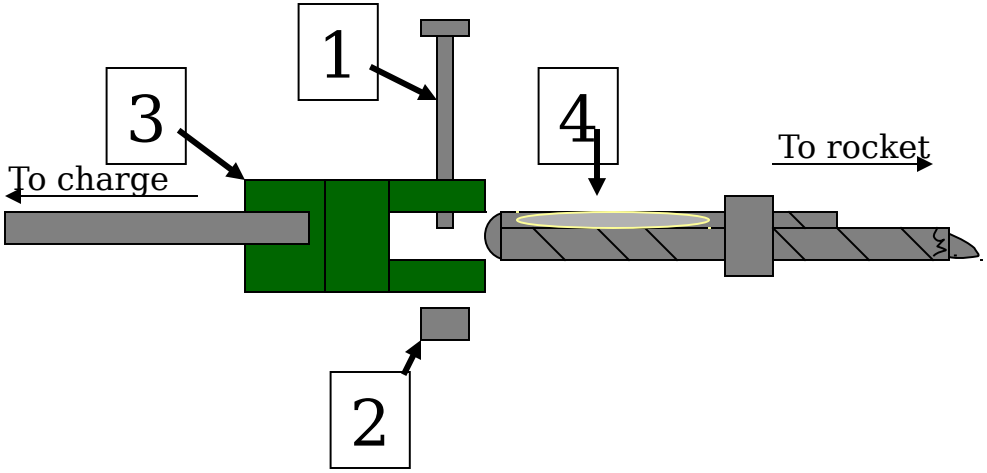


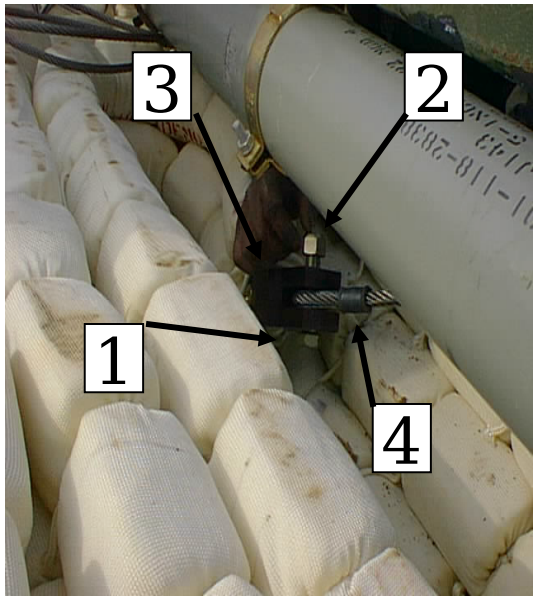
a) Position rail at 10° and install ball lock pins in lock position and thoroughly grease rail using graphite grease (GMD is used most task forces for gun tubes)
b) Lift rocket (three man lift) with nose end forward.
c) Slide rocket rear button lug into launcher rail groove
d) Pull back on rocket release handle
e) Push rocket rearward until it firmly seats on front and rear [2 alignment pins
f) Release rocket release handle
g) Pull on rocket to ensure that there is no forward movement
h) Hand tighten hand knobs [3] to engage rocket bands [4] (bol should be at right angles to the rocket bands
i) Place a strap tie down (zip tie [5]) around the hand knob bolt and the guide pin [2] as shown below for each of the four hand knob sets
j) Place ball lock pins in RAISE position and release detents.
k) Raise rail to 20° and install ball lock pins in LOCK position
(continued)

Install Rocket (2 of 3)

l) Take bridle cables [1] from each side of rocket and insert into
cable sheath [2]. Ensure that the cable slides freely and there is
approx. 18” of cable looping from rear of the rocket to the sheath.
m) Position remainder of bridle cable on top of linear charge in
an “S” pattern from the rear to the front of the charge container
n) Use masking tape to tape bridle cable to launcher rail in 3 locations.
o) Fold front of cable back to front of charge.

Install Rocket (3 of 3)



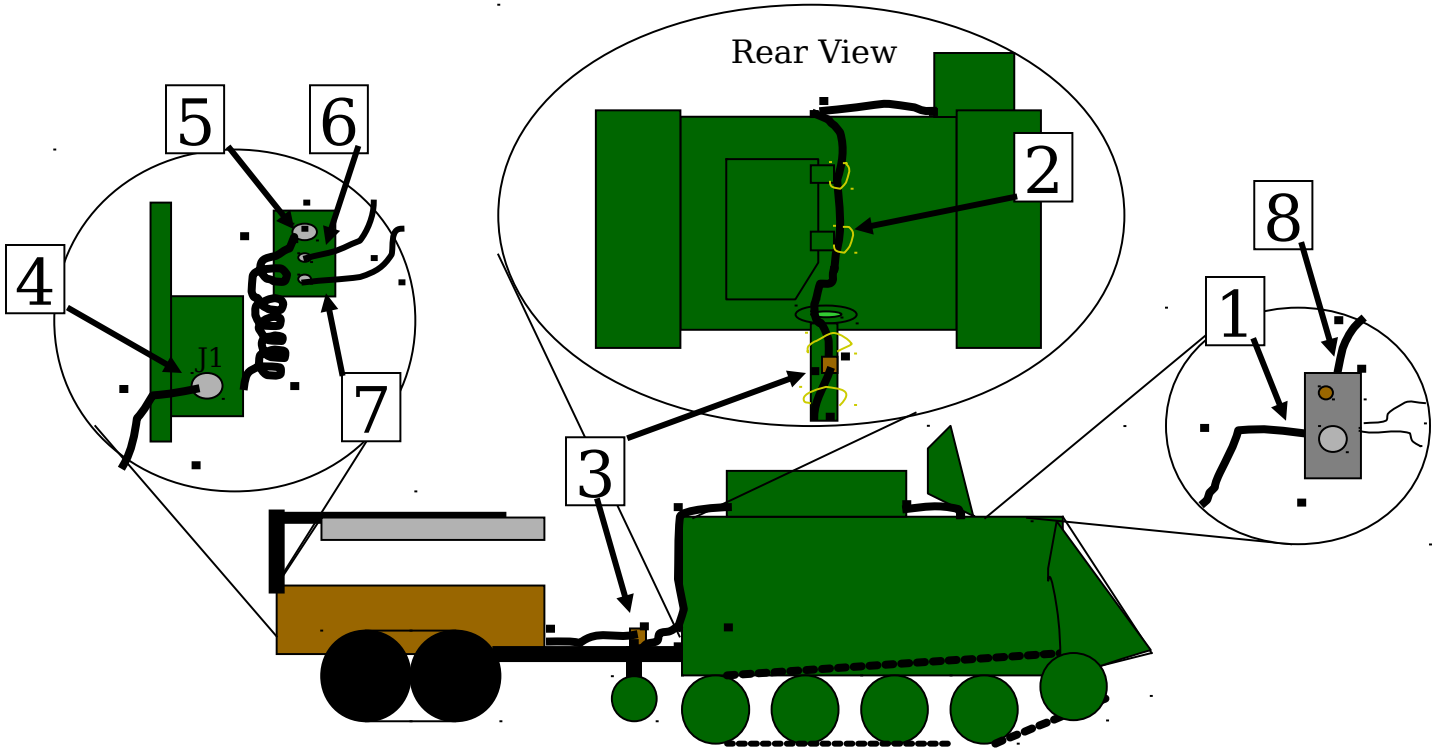


p) Remove bolt [1] and nut [2] from harness connector [3] and slip rocket bridle loop [4] into the connector
q) Replace bolt through connector and loop and tighten
r) Ensure that the rocket harness connector [3] is facing forward
s) Remove ball lock pins from LOCK position and slowly lower the rocket.
t) Install ball lock pins in LOCK position

Install Electrical Cables

nect W3P2 (75 ft) cable to the selector switch assembly [1]
nove one periscope assembly and thread W3P2 out, routing
g the top of the vehicle beside the pioneer box to the rear
te the W3P2 down the rear of the vehicle along the door
securing it to the hinges with strap tie downs (zip ties) [2]
nect W3P2 to the W5 cable near trailer lunette (eye)
ng the cables down with zip ties leaving enough slack in
iler lunette for free movement [3]
te W5 along the left side of the trailer using pig tail hooks
nect W5 to the safety switch box [4]
nect safety switch electrical lead to receptacle #1[5]

h) Connect linear charge electrical lead to receptacle #2 [6]
i) Connect rocket electrical lead lead to receptacle #3 [7] (only if firing, all tests should be done with shunt)
j) Connect W6 (power cable) to A1J1 connector on top of selector switch box [8]
k) Connect NATO connector on W6 to the vehicle power receptacle
l) Only when ready to fire, connect the P3 and P4 connectors to the blasting machine

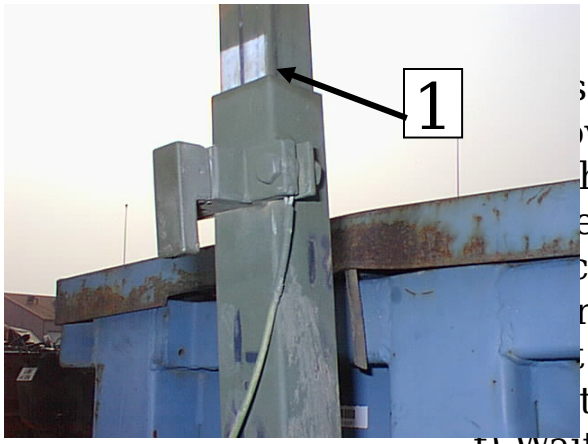


Preparation for Deployment

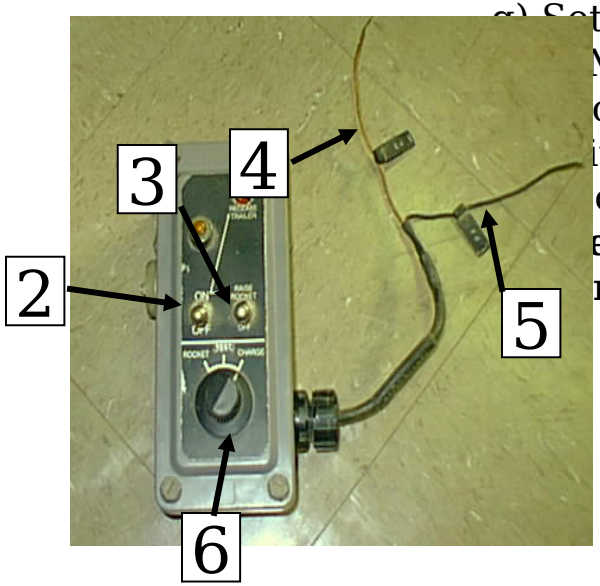
) Conduct all inspection, continuity, and installation procedures
) Engage detents on rail supports and ensure ball lock pins are in RAISE position
) Set hydraulic control valve to Pressure Accumulator position
) Set release valve to Hold position and pump to 3200 PSI
) Inspect wire routing ensuring wires will not bind or stretch during movement
Install ball lock pin in nose of rocket [1]

** For travel, utilize foam cushion from rocket box to insert between charge and rocket nose. Also use ratchet strap to stabilize rocket in down position and keep it from bouncing during movement. Remove foam cushion and strap prior to inserting ball lock pin in nose of rocket.

Firing/Detonating the MICLIC

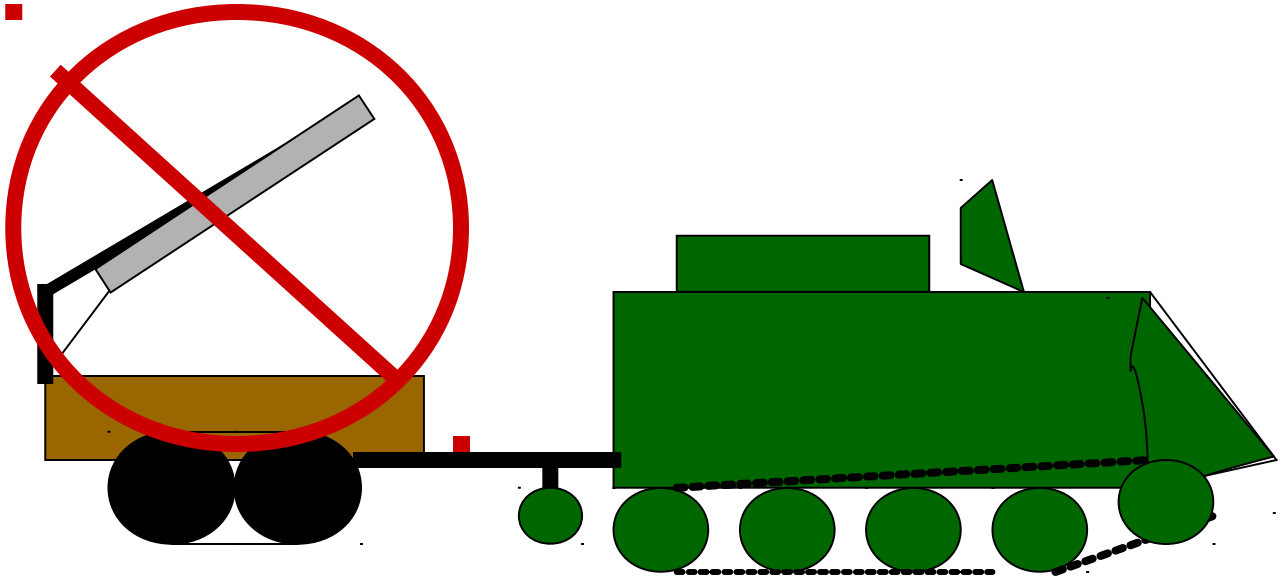


sition MICLIC 62 m back from mine field oriented in direction of tr
ve Vehicle Power Toggle Switch [2] and Raise Rocket Toggle
h [3] to ON and RAISE position simultaneously
eck for White marks [1] on inner launcher rail supports through re
cope
nnect Blasting machine to P3 [4] and P4 [5] leads on Control Box
mode selector switch [6] to rocket and activate blasting machine
t
f) Wait 10 seconds for deployment and visually verify that line charge is fully extended.
g) Set mode selector switch [6]to charge and conduct continuity check
M51Test Set
connect blasting machine and activate to detonate line charge
it 1 minute for fallout
of lane
either the rocket fails to deploy or charge fails to detonate,
re procedures



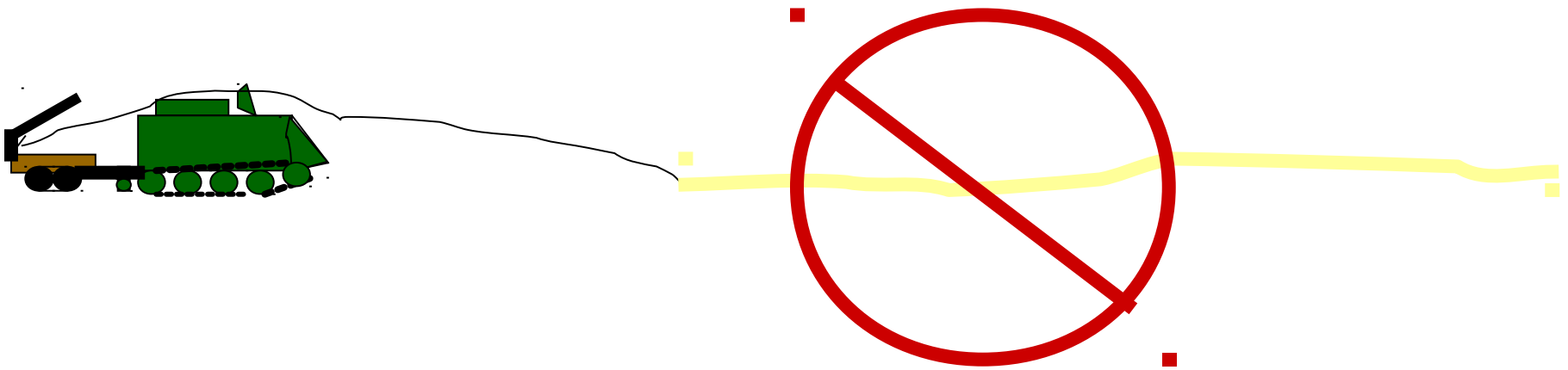
Rocket Misfire Procedures

nnect blasting machine and turn control assembly switch to TEST
launcher aimed at target mine field for 30 Min in case of hangfire
30 minutes inspect wires to verify that they were properly installed and did not come loose during m
nnect rocket cable from receptacle #3 and install shunt
ect M51 to control assembly, rotate switch to ROCKET, and test circuit
did light: Fault is in rocket. Lower rocket and remove ball lock pin from the nose of rocket. Tow roc
fe area. Remove rocket from rail, paint MISFIRED on rocket, and return it to ASP in original shipping
did NOT light: Fault is in cables or safety switch box. Repeat continuity tests to check connections.
et and remove ball lock pin from the nose of rocket. Tow rocket to a safe area. Remove rocket from r
FIRED on rocket, and return it to ASP in original shipping container. Have unit maintenance inspect
rt malfunctions IAW AR 75-1

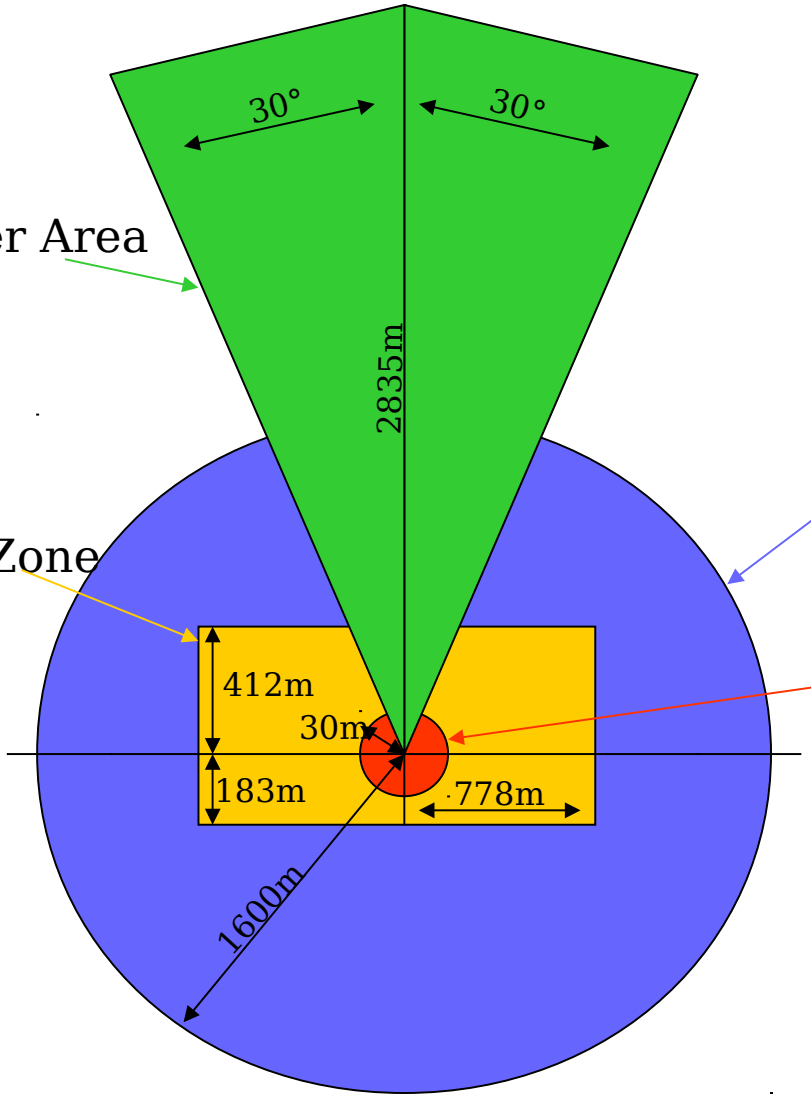


Line Charge Misfire Procedures

mpt to operate Blasting machine 3 additional times
onnect blasting machine and turn mode selector switch to TEST
nbat: attempt to detonate using weapon fire from vehicle or covering vehicle
ning(or step 2 fails): move vehicle forward to release tension, check cables, correct any problems, an
g sequence
onnect line charge and evacuate vehicle and trailer from area
nbat: Detonate line charge by artillery fire
ning: Line charge will be detonated with primed charge (pop-n-drop) by EOD personnel after fuse has
overed, disarmed, and retained for inspection.
rt malfunction IAW AR 75-1



Safety Zones for live MICLIC



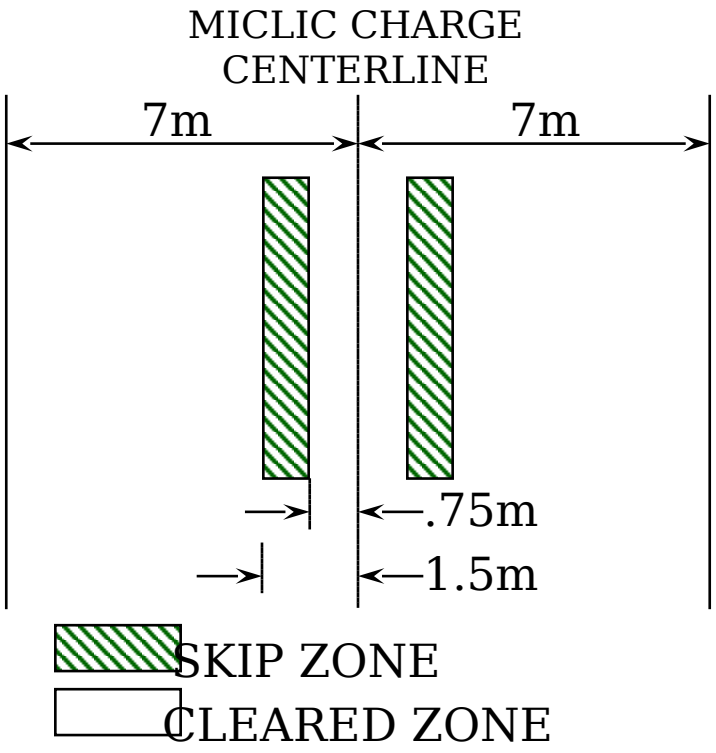
Surface Danger Area

Fragmentation Zone

Noise Hazard Contour (1600m with live charge and 366m with inert charge)

Area F (Firing personnel shall be in a protected position or armored vehicle in a button-up mode with single hearing protection during firing with inert and live

MICLIC CAPABILITIES

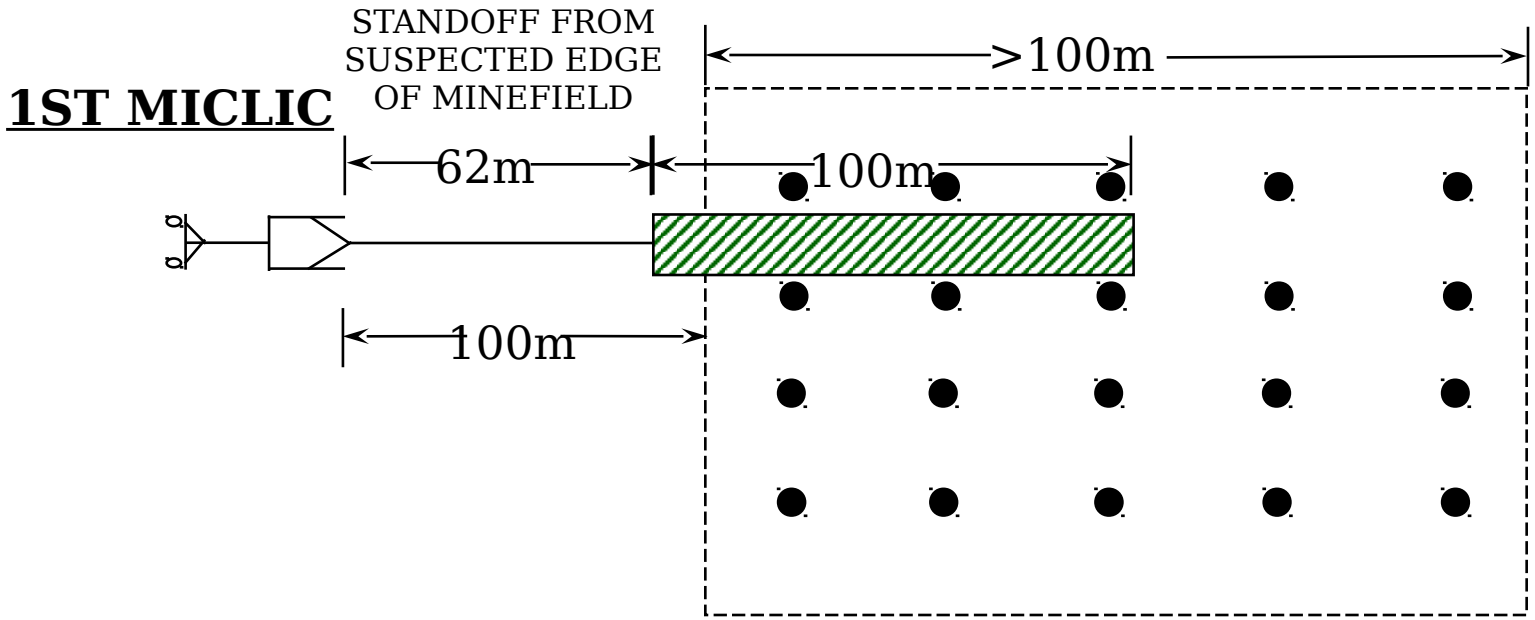


CLEARS A PATH 100m x 14m, WITH THE EXCEPTION OF SOME DEEPLY BURIED MINES ALONG A NARROW SKIP ZONE

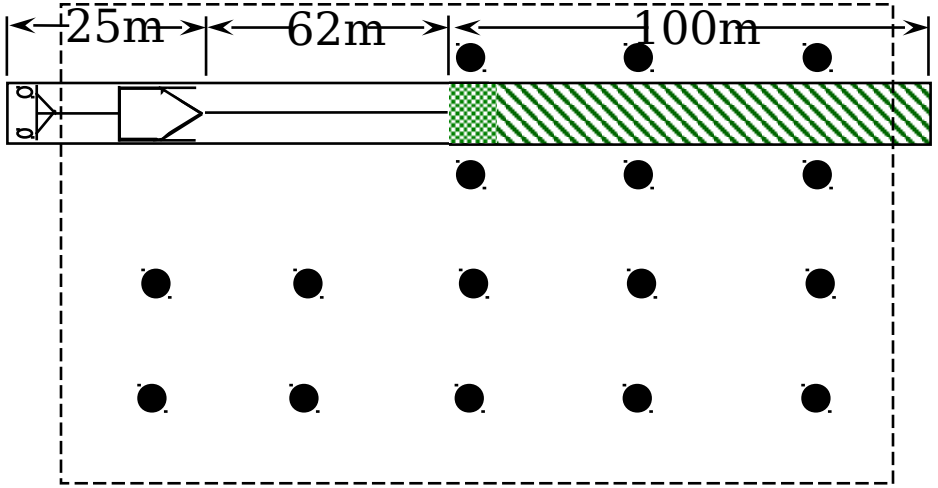
LIMITATIONS

MINES CONTAINING MAGNETIC OR OTHER NON-PRESSURE-SENSITIVE FUSES MAY ESCAPE DESTRUCTION FROM OVERPRESSURE, BUT WILL USUALLY BE UNCOVERED & BLOWN SIDEWAYS OUT OF THE LANE.
ARMORED VEHICLES AVOID MINES BY KEEPING THE LEFT TRACK IN THE CLEARED CENTERLINE. ALWAYS PROOF THE LANE WITH ROLLERS IF AVAILABLE.

MICLIC EMPLOYMENT



2ND MICLIC MOVES 25m INTO THE 1ST MICLIC'S PATH AND FIRES ITS CHARGE. THIS EXTENDS THE LANE AN EXTRA 87m. ADDITIONAL MICLICS ARE USED LIKEWISE. (MICLIC CLEARS A 14m BY 100m PATH.)



M68A2 Inert Charge

Continuity Test

The continuity tests for the M68A2 Inert Line Charge are the same as those for the live charge

Inspection

Check For	Accept	Reject	Action
Loss of paint	Small area	Large area	A: touchup/continue R: ASP for assistance
Markings smeared or illegible	Lot #legible	Lot #illegible	A: continue R: ASP for assistance
Rust or corrosion	Slight	Moderate/Heavy	A: clean and touchup/continue R: ASP for assistance
Penetration damage	Slight	Any that precludes using containers	A: N/A R: ASP for assistance
Damage to charge or nylon rope	Very slight	Any that effects detonating cord or rope core	A: repair R: Demil (code D)
Moisture on line charge, nylon sleeve	Damp	Wet	A: Dry before using R: Dry before using
Tear damage to linear demolition charge	Slight tears that will not affect functioning	Extensive tears rendering line charge unusable	A: repair locally R: Demil (code D)

Mark charge each time fired. Do not use inert charge more than 3 firings

Firing procedures

The firing procedures for the M68A2 Inert Line Charge are the same as those for the live charge minus the fuse installation and detonation of the charge

Recovery of Line Charge

For repackaging of line charge see the -14P, pp 3-4 - 3-6. Cut every 5th block off the charge before recovering.

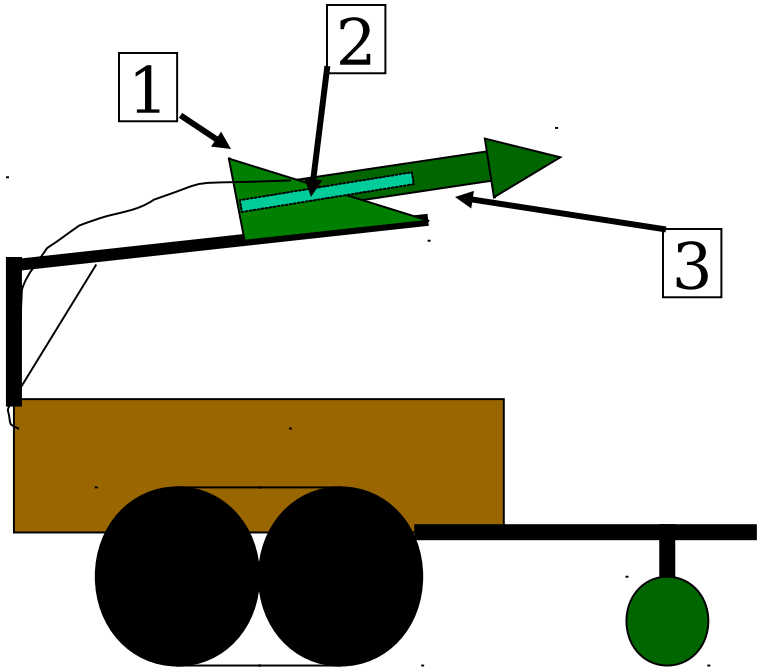
Smokey SAM

Installation

a) Slide launcher attachment [1] over rail, oriented toward the front of the trailer, and secure
b) Splice wires from rocket electrical lead of expended rocket to wires of igniter
c) Tape igniter halfway up the shaft [2] of the Smokey Sam
d) Slide rocket [3] over shaft and igniter
e) Attach rocket electrical lead to receptacle #3 of charge box

Firing procedures

The firing procedures for the M68A2 Inert Line Charge are the same as those for the live charge minus the fuse installation and detonation of the charge



SIDEWINDERS

REFERENCES

- REFER ANY QUESTIONS TO TM 9-1375-215-14&P.
- LUBE IAW CHAPTER 3 OF THE TM.
- REFER TO TM 9-2330-389-14&P FOR PMCS OF MODIFIED M200A1 TRACKED TRAILER.

LAUNCH RAIL

IT IS EASIEST TO START FROM THE TOP DOWN: BEGIN WITH THE LAUNCHER RAIL AND COMPONENTS.

LAUNCH RAIL

- CHECK THE ALIGNMENT PINS TO ENSURE THAT THEY ARE NOT BENT, THERE ARE NO BROKEN WELDS, AND THE FRONT PINS MOVE ON THE HINGES.
- **NMC** IF: FRONT ALIGNMENT PIN HINGES DO NOT MOVE FREELY. ALIGNMENT PINS ARE BENT, BROKEN, OR DISTORTED. ALIGNMENT PIN WELDS ARE BROKEN.

- CHECK HAND KNOBS FOR FREE MOVEMENT. MAKE SURE THEY ARE NOT BENT OR STRIPPED AND THAT THE SPRINGS ARE PRESENT.
- **NMC** IF: HAND KNOB ASSEMBLIES ARE SEIZED OR DO NOT MOVE FREELY.

LAUNCH RAIL

- CHECK TO SEE IF THE KNOBS WILL TIGHTEN ONTO THE ROCKET PROPERLY. YOU CAN ADJUST THE HANDLES WITH A 9/16 WRENCH.
- **NMC** IF: KNOBS ARE SEIZED OR WILL NOT ADJUST.

- CHECK BRIDLE CABLE SHEATHS FOR DENTS AND THAT ALL SCREWS ARE PRESENT.
- **NMC** IF: CABLE SHEATHS ARE DENTED SO AS TO INTERFERE WITH BRIDLE CABLE MOVEMENT. MISSING ANY SCREWS.

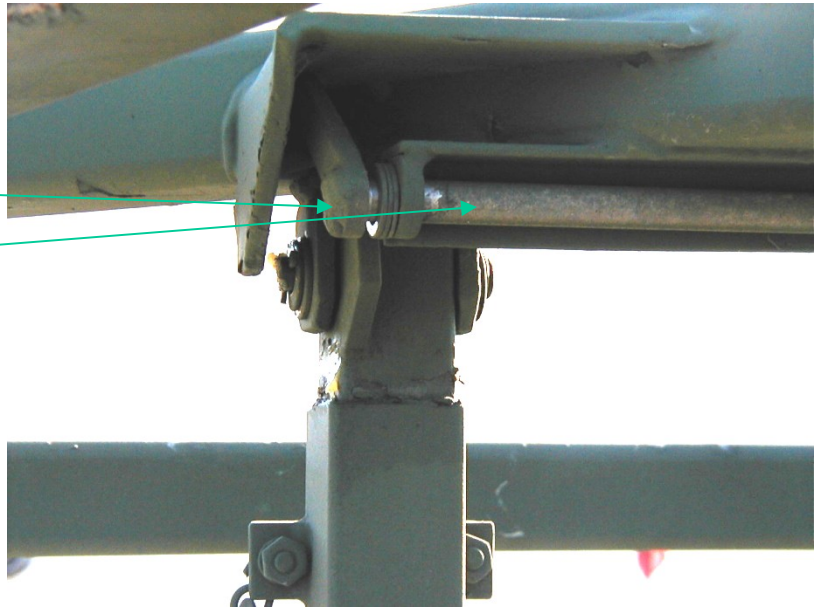
LAUNCH RAIL

- CHECK RAIL GROOVE FOR DENTS TO ENSURE THE ROCKET WILL MOVE EASILY ALONG LAUNCH RAIL. LUBE WITH SILICONE, NOT GAA, IT WILL CATCH FIRE.
- **NMC** IF: RAIL GROVE IS DISTORTED OR OBSTRUCTED

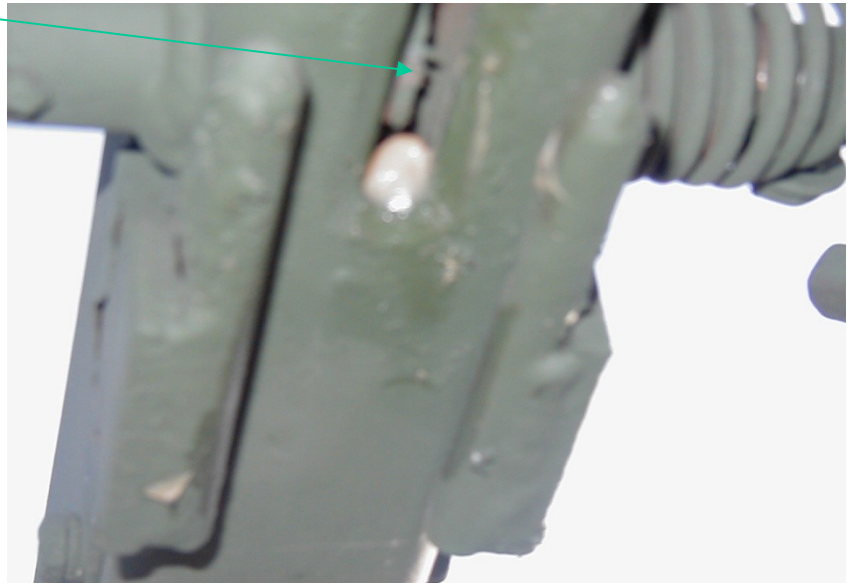
- CHECK THAT THE ROCKET RELEASE MECHANISM MOVES FREELY.

LAUNCH RAIL

- ENSURE ROCKET RELEASE LINKAGE IS NOT BROKEN, AND THAT IT HAS ALL WASHERS AND SPRINGS.

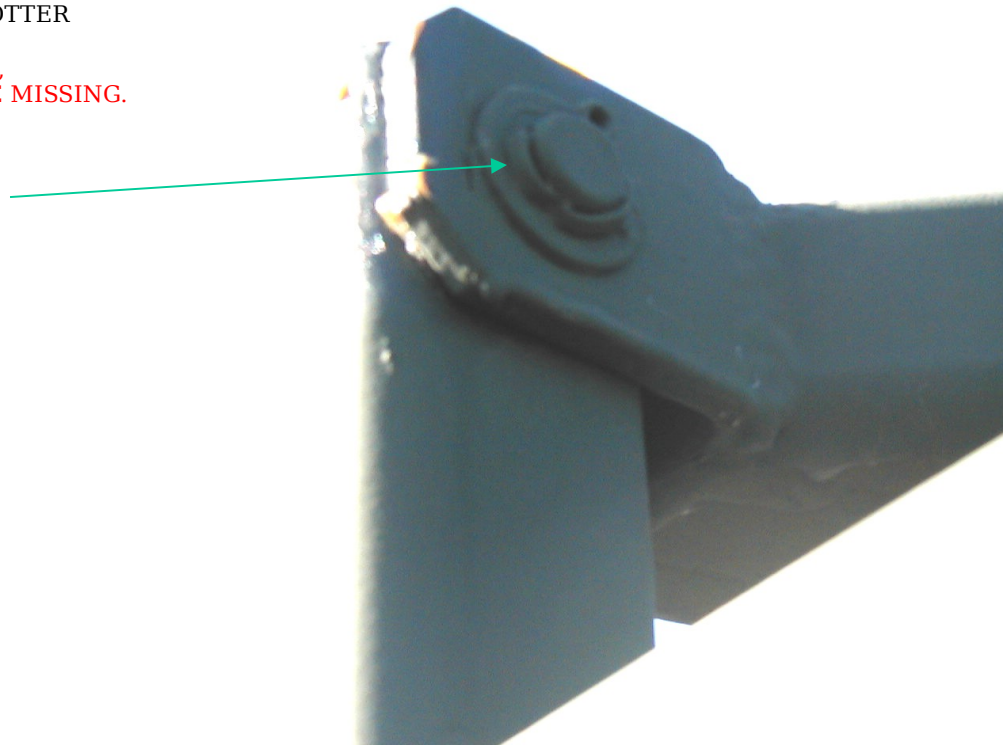


- CHECK ROCKET RELEASE CLASP MOVES WHEN YOU PULL THE ROCKET RELEASE HANDLE.
- **NMC** IF: ROCKET RELEASE MECHANISM DOES NOT MOVE FREELY, LINKAGE IS BROKEN, ALL WASHERS AND SPRINGS ARE PRESENT. ROCKET RELEASE CLASP DOES NOT MOVE WHEN YOU PULL THE RELEASE HANDLE.



LAUNCH RAIL

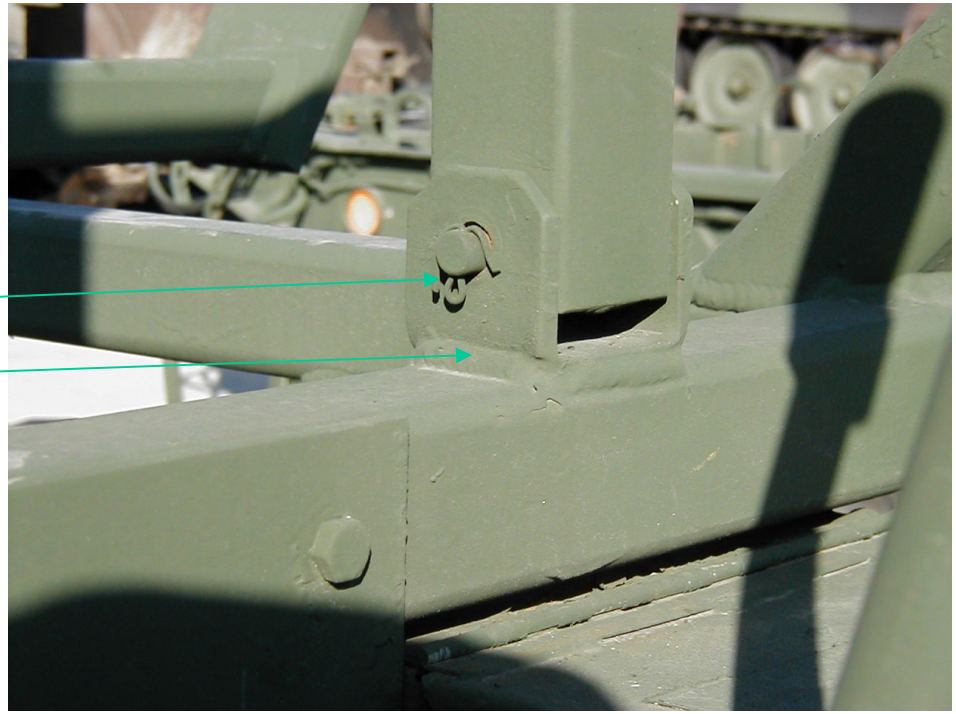
- ENSURE THE PIVOT POINT CAM PINS HAVE COTTER PINS AND WASHERS.
- **NMC** IF: PIVOT POINT CAM PINS ARE MISSING, WASHERS ARE MISSING, OR COTTER PINS ARE MISSING.



RAIL SUPPORTS

RAIL SUPPORTS

- ENSURE RAIL SUPPORT CAM PINS HAVE WASHERS ON BOTH SIDES, AND CHECK FOR BROKEN WELDS.
- **NMC** IF: MISSING CAM PINS, WASHERS ON BOTH SIDES, COTTER PINS, OR THERE ARE ANY BROKEN WELDS.

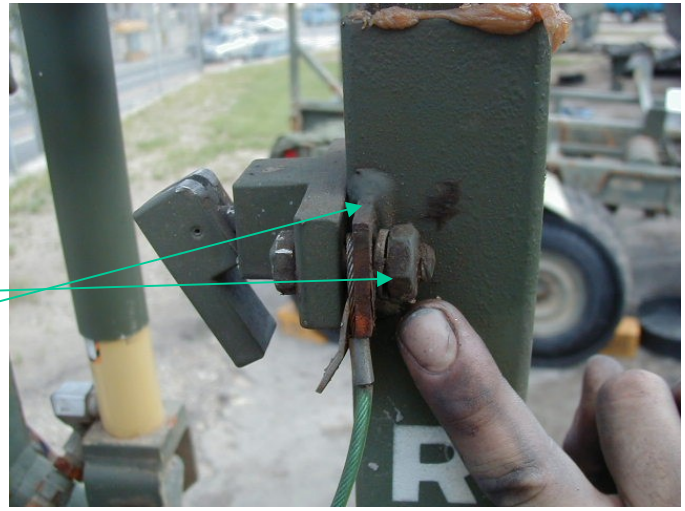


- IF YOU HAVE NO WASHERS, IT DESTROYS COTTER PINS, AND THE CAM PIN WILL FALL OUT.

RAIL SUPPORTS

- DETENTS SHOULD STAY IN THE UP POSITION WHEN YOU FLIP THEM UP. RAISE LAUNCH ARM TO 45 DEGREES UNTIL THE DETENTS ENGAGE. ONCE THE DETENTS ENGAGE, RELEASE PRESSURE SLOWLY. DETENTS SHOULD HOLD LAUNCHER RAIL AT 45 DEGREES.
- **NMC** IF: DETENTS DO NOT STAY IN THE UP POSITION. DETENTS DO NOT HOLD LAUNCH RAIL IN THE UP POSITION.

- DETENT ASSEMBLIES SHOULD HAVE LOCK WASHERS. ALSO CHECK FOR LOOSE BOLTS OR BROKEN WELDS.
- **NMC** IF: LOCK WASHERS, NUTS, OR BOLTS ARE MISSING. IF THERE ARE BROKEN WELDS.



RAIL SUPPORTS

- CHECK INNER RAIL SUPPORTS FOR WHITE “T” STRIPE, LUBE LIGHTLY WITH GAA.
- **NMC** IF: T STRIPE IS NOT VISIBLE

- CHECK BALL LOCK PINS FOR PROPER FUNCTION. ENSURE THEY LOCK INTO RAIL, AND CHECK FOR THE ATTACHING CABLE.
- **NMC** IF: BALL LOCK PINS ARE MISSING OR UNSERVICEABLE.

RAIL SUPPORTS

- WITH ROCKET ARM UP, MAKE SURE ROLLER ON SAFETY SWITCH MOVES FREELY AND THAT SAFETY SWITCH ENGAGES.
- **NMC** IF: SAFETY SWITCH DAMAGED OR MISSING PARTS. ROLLER MISSING OR DOES NOT ROLL FREELY.

FRAME AND HARDWARE

FRAME AND HARDWARE

- CHECK FOR PRESENCE OF U-BOLTS. THEY MUST HAVE A LARGE FLAT WASHER AND SPLIT WASHER PER NUT.
- CHECK ENTIRE FRAME FOR BROKEN WELDS
- CHECK STORAGE BOX FOR OBVIOUS DAMAGE, CHECK HINGES FOR OPERATION.
- **NMC** IF: U-BOLTS MISSING ANY WASHERS. ANY BROKEN WELDS ON THE FRAME. STORAGE BOX HINGES BROKEN.

FRAME AND HARDWARE

- CHECK TURN BUCKLES FOR LOCKING NUTS ON BOTH ENDS. MAKE SURE THEY FACE OUT WHEN MOUNTED ONTO THE TUB AND TRAILER.
- **NMC** IF: TURNBUCKLES ARE STRIPPED, OR ARE MISSING LOCKING NUTS.

HYDRAULIC SYSTEM

HYDRAULIC SYSTEM

- MAKE SURE FLUID LEVEL IS BETWEEN ADD AND FILL ON RESEVIOR DIP STICK, AND ENSURE THE FLUID IS NOT MILKY OR CONTAMINATED.
- **NMC** IF: HYDRAULIC FLUID IS CONTAMINATED OR IS NOT BETWEEN THE ADD AND FILL MARK.

- INSPECT LINES AND FITTINGS NEAR RESEVIOR FOR LEAKS OR DAMAGE.
- **NMC** IF: THERE ARE CLASS III LEAKS, OR DAMAGE TO LINES AND HOSES.

HYDRAULI

- INSPECT CYLINDER LINES AND FITTINGS, AS WELL AS MOUNTING HARDWARE FOR CYLINDER.
- **NMC** IF: THERE ARE CLASS III LEAKS. MOUNTING HARDWARE IS MISSING OR DAMAGED.

- CHECK CONTROL VALVE FOR SMOOTH OPERATION AND APARENT DAMAGE, MOVE INTO THE “PRESSURE ACCUMULATE” POSTION.
- **NMC** IF: VALVE DOES NOT WORK.

HYDRAULI

- PUMP PRESSURE UNTILL GAUGE IS IN THE GREEN. IT WILL LOOSE SOME PRESSURE FOR A FEW SECONDS, BUT, IT SHOULD STABALIZE AFTER ABOUT 15 TO 20 SECONDS.
- **NMC** IF: PRESSURE GUAGE DOES NOT WORK, OR IT CONTINUES TO LOSE PRESSURE.

- AGAIN, CHECK ALL HYDRAULIC LINES AND CYLINDER FOR LEAKS
- **NMC** IF: THERE ARE CLASS III LEAKS, CRACKS, OR ANY DAMAGE TO LINES, HOSES, OR CYLINDER.

HYDRAULIC SYSTEM

- MOVE BALL LOCK PINS TO THE SIDES OF THE RAILS, OR THE “RAISE” POSITION AND PULL DETENTS DOWN. MOVE CONTROL VALVE TO ROCKET RAISE, LAUNCHER ARM SHOULD RAISE TO APPROXIMATELY 45 DEGREES.
- **NMC** IF: CONTROL VALVE DOES NOT WORK, OR LAUNCHER ARM DOES NOT RAISE.

ELECTRICAL SYSTEM

ELECTRICAL SYSTEM

- MAKE SURE THAT ALL CABLES HAVE DUST CAPS, THEY ARE VERY IMPORTANT. ALSO CHECK FOR CUTS OR PINCHES IN CABLES.
- **NMC** IF: DUST CAPS ARE MISSING, OR THE CABLES ARE PINCHED OR CUT.

HOW TO TEST THE CABLES

- CONNECT THE CABLE SYSTEM TO THE MICLIC TRAILER. POWER UP SYSTEM AND RAISE THE LAUNCHER ARM USING THE HCU. IF IT DOES NOT WORK, TEST THE CABLES AND REFER TO THE 14&P.
- **NMC** IF: SYSTEM DOES NOT POWER UP OR THE LAUNCHER ARM DOES NOT RAISE.

TO CHECK SAFETY SWITCH

- DISCONNECT THE J1 PLUG AND IDENTIFY THE A, B, C, AND D PINS. DO THE SAME ON THE P1 CABLE. USING A MULTIMETER ON THE "OHMS" SETTING. INSERT LEADS INTO THE A PINS ON BOTH THE P1 AND J1 PLUGS.
- IF THE LAUNCHER RAIL IS DOWN, THERE SHOULD BE NO CONTINUITY IN A OR B PINS, ONLY THE C. D IS NOT USED. IF THE LAUNCHER ARM IS UP, THERE SHOULD BE CONTINUITY IN A, B, AND C PINS. IF ONE OF THE TESTS FAIL, REFER TO THE 14&P.
- **NMC** IF: SAFETY SWITCH FAILS ONE OF THESE TESTS.

HOW TO TEST THE CABLES

- USE THE M51 TEST SET AND A PIECE OF COMMO WIRE. CONNECT THE CABLE SYSTEM TOGETHER (IE: W6, W5,W3, AND HCU). ENSURE ROCKET ARM IS RAISED AND HCU IS IN “CHARGE” POSITION.
- CONNECT THE W5 CABLE TO SAFETY SWITCH (J1) PLUG, TAKE THE SAFETY SWITCH CABLE (P1) AND JUMP THE A AND B PORTS, THIS SIMULATES A LINE CHARGE AND WILL CHECK THE SAFETY SWITCH AND CABLE SYSTEM.

HOW TO TEST THE CABLES

- IF THE LIGHT ON THE M-51 DOES NOT FLASH WHEN THE LAUNCHER ARM IS RAISED, CHECK THE SAFETY SWITCH. IF SAFETY SWITCH WORKS, ONE OF THE CABLES IS BAD.
- **NMC** IF: CABLES OR SAFETY SWITCH FAIL THIS TEST.
- TO CHECK CONTINUITY IN THE CABLES, STICK LEADS FROM A MULTI METER ON THE “OHMS” SETTING IN THE SAME PORTS ON OPPOSITE ENDS OF THE CABLES. IF ONE OF THE CURCUITS IS INCOMPLETE, REFER TO THE 14&P.
- **NMC** IF: ONE OF THE CABLES FAILS THIS TEST.

BLASTING MACHINE

- CHECK BOTH BLASTING MACHINES FOR PROPER VOLTAGE USING A MULTI METER IN THE “DC” POSTION. BOTH BLASTING MACHINES SHOULD PUT OUT 222 VOLTS. ALSO CHECK HCU FOR ANY DAMAGE, OR MISSING KNOBS.
- **NMC** IF: THE BLASTING MACHINES DO NOT PUSH OUT AT LEAST 222 VOLTS. HCU IS MISSING KNOBS OR SWITHCHES.